

REMARKS-General

By the above submitted amendment, applicant has rewritten claims 4, 5, 7 and 15 so as to overcome the technical rejections and define the invention patentably over the prior art.

OA issues #1 and #2

Pursuant to 37 CFR 1.111 (b), applicant requests that objections and requirements as to form not necessary to further consideration of the claims 1-7 and 11-16 be held in abeyance until allowable matter is indicated in these claims.

Claims rejection under 35 USC 112

OA issue #3

Claims 4, 5, 7 and 15 were rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant requests reconsideration and withdrawal of this rejection, because all the following changes or explanations are submitted:

(i) in amended claim 4, the language "they could overlap" has been deleted as well as "every of said arms", "said four ones" and "could have their contact faces..." and replaced by a new wording; claim 5 has been amended accordingly;
(ii) claim 7 has been narrowed in view of Pappas (US patent #4,580,769), claim 4, and as a result the language "so as to turn of said arms those which are..." has been deleted.
(iii) in claim 15, "loop-shaped gland" has been replaced by "sliding holder",

OA issue #5

Claim 15 was rejected under 35 USC 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor at the time the application was filed, had possession of the claimed invention. Specifically, there would be no support for a "loop-shaped gland".

Applicant requests reconsideration and withdrawal of this rejection, because it can be found stated in the original specification, page 22, lines 23-24, that the connection means between one of the movable arms and the support part could be made of a "stirrup". What is looking for is a good and understandable word in American English to stand for the French word "étrier" which is this connection means in the original French application (page 22, lines 1-2 of the specification). Until recently, it was believed that "stirrup" could do that. The American Heritage Dictionary of the English Language, meaning #2 suggested it. Apparently according to the OA dated of 12/15/97, point #7, it would be not clear what a "stirrup" could be. According to a technical glossary, it would have seemed that "loop-shaped gland" could have been a good translation. But in last OA, end of point #3, such a wording was found unclear. Now is plainly

suggested "sliding holder" which is the verbatim translation into English of what it was meant by "étrier" in French within mechanics. If this translation is found to be proper, the same wording will be suggested as a substitute for "stirrup" in the next amendment of the specification.

OA issue #7: Claims 1-3 and 11-16 rejection under 35 USC 103 as being unpatentable over Neff in view of Thornton

Before considering the interest of combining Neff and Thornton, it must be pointed out that applicant's invention as defined by claims 1-3 and 11-16 is classified in a crowded field, that is a field that is mature and that contains many patents. No less than 16 different patents were cited with the same classification as prior art for this invention. Therefore a small step forward should be regarded as significant.

Moreover the results achieved by the invention as defined by claims 1-3 and 11-16 are new and unexpected.

Firstly, this invention provides a precise tactile perception of the gradualness of the clamping, in other words a comfort in clamping never got before. This advantage over the other clamps has been recognized important enough to be a part of the few words Knilling, as a distributor to the violin makers of the clamps according to the invention in America, liked to write on the back of the postcard they issued in their name and sent to their 5,000 customers (please have a look at the enclosed copy of said postcard, exhibit #1). This result was never achieved until now not even sought and consequently not suggested. Indeed, the use of a means such as a lever associated with another lever as in Neff, or a lever associated with a screw as in Brennan, Lindholm, Pettigrew, Bell or Oberst to turn the clamping force into a great multiple of the hand strength or a lever associated with a spring as in clothespins, alligator clips, some tweezers or Nelson, Pearson or Thornton to replace the hand strength by a substitute to make the clamping force gives the hand a loose perception or no perception at all of the gradualness of the clamping. That prevents the hand from feeling how really clamping develops. The fact that most of the clamp designers until recently could not refrain from including such an amplification or substitute means for the hand strength shows that the new result produced by the invention was even not wanted, to say the least not suggested. On the other side, the fixing in a jaw of two spaced slide rods in Ditto or Pappas or even three in Coffman at one of their ends goes against an easy pushing of the other jaw towards the object to be clamped. Even if the rods could be rigorously maintained parallel to each other, which is all but easy because of their recommended flexibility in Coffman (p.1, lines 49-50) and because the other end of these rods is left free in Ditto and Pappas, it is difficult to move this other jaw along said rods and keep it from tilting. A jaw can slide properly along a rod only if it is pushed close to this rod. If it pushed somewhat far from one of the rods, it has a tendency to move a bit faster where it is pushed than in its proximity to the rod and in this way tilts. As a result, it jams against said rods and jaw pushing is often stopped. Uneasy pushing of said jaw goes against tactile perception of the clamping advance. In addition the jaws in

these patents are provided with pads which are elastic as cork is that is to say tough (commercial embodiments of said patents confirm that), i.e. with only very shallow elasticity. Shallow elasticity gives only a short range of deformation of pads which precludes any comfort in clamping. This limitation is common to the "hammer press" (see first pages of the present specification) where jaws are provided with cork pads or no pads at all. In the EPO 0080960 patent to Berna, figure 4, the rod guide of the spring under the repelling reaction of the clamped object has a tendency to tilt in its passage hole through its supporting jaw because of the necessary play to its move. As a result, this rod guide jams against the jaw and compression of said spring has to be interrupted, relaxed and resumed. This prevents from precisely perceiving clamping gradualness.

On the contrary, in the present invention as defined by claims 1-3 and 11-16 there are only one beam and that avoids any risk of jaw jam against another beam, no amplification means of the hand strength or substitute for it and that provides tactile perception, not only tough pads but springy (substantially elastic) buffers which gives deep amplitude in the clamping, that is precision in the gradualness of the clamping.

Secondly, the invention as defined by claims 1-3 and 11-16 provides another new and unexpected result which is avoiding any pressure peak when difficult-shaped surfaces are clamped: with springy (substantially elastic) buffers and no amplification or substitute means of the hand strength at all to get the clamping force, this one can be on the one hand moderate and on the other spread over a fairly large surface as the buffer conforms to difficult shape, and not only along a narrow ridge (see affidavit filed on 06/16/95). When a moderate clamping force is spread over a fairly large surface, the resulting pressure over this surface is necessary moderate (by definition the clamping force equals the product of the pressure by the area of the covered surface). Of course when the clamping force, even moderate, is exerted only over a narrow ridge (see in particular on the color copy, included along with affidavit filed on 06/16/95, photos showing clamps according to Ditto and Pappas), that gives a very high pressure located to the ridge, that is a pressure peak, because the area of the covered surface is almost null. Avoiding any pressure peak when difficult-shaped surfaces are clamped is an unexpected result because it was not suggested or shown in the prior art. Jaws could be considered as provided with springy buffers in Oberst (the only reference which could be considered as such although Oberst is not surely belonging to prior art because of its late filing date). But there is also a strong amplification means -lever and screw- in Oberst to turn the hand strength into clamping force. The resultant clamping force is so large that even spread over a fairly large area it gives a high pressure everywhere with the corresponding risk of damage (see in particular exhibit #13 where it is said "But such brute force is disastrous for model work" in reference to "C-clamps, spring clamps, bands, and pipe clamps both large and small" irrespective of whether the opposite faces of the involved delicate workpieces are parallel or not - of course when said opposite faces are parallel, the clamping force is normally spread over a large area with such clamps -). That implies that Oberst was not aiming at avoiding high pressure. In fact his actual objective was just holding irregular-shaped workpieces as he said in his preamble (page 1, lines 10-16). He was even not suggesting that

avoiding high pressure could be worthy. Moreover even if in Bell, there would be a springy buffer (flexible PVC has however been proven tough), even if in Thornton there would be also a springy buffer (having a slightly greater size for a rubber pad than the jaw it wraps - see Thornton p. 4, lines 16-17 - however means that it is just thin and supple but no more springy than the sole of an ordinary shoe for city walk is, that is to say not springy at all unlike sneakers), the fact the clamping force is either a strong multiple of the hand strength -in Bell- or a strong substitute of it -in Thornton-, it would give a high pressure against the clamped surface whatever the shape is. Further on, even if springy buffers could have been taken out from Thornton (which could not have been as explained just above) to equip the jaws of Neff in the combination such as the one considered in the OA, that would also result into clamping under high pressure because Neff comprises a mighty amplification means (lever + lever) of the hand strength (and there is no suggestion at all of discarding it or not to use it). So there is no showing nor even suggestion in the prior art of avoiding any pressure peak or high pressure at all against clamped workpieces. Clearly that was not a preoccupation of the designers of the prior art. Therefore avoiding any pressure peak against clamped workpieces is a new and unexpected result which can only be attributed to the invention as defined by claims 1-3 and 11-16. Moreover combination of Neff and Thornton as considered in the OA appears to be inapplicable to claims 1-3 and 11-16 because it cannot provide such a result.

On the other hand, applicant's invention as defined by claims 1-3 and 11-16 solves a long-felt, long-existing and unsolved need. That was well perceived by Hardi, as the British distributor to the hobbyists of the clamps according to the invention when they introduced the clamps as "the answer to the prayers of Model Makers, Restorers and Craftsmen". This message which was published in the brochure they issued in their name for the users means: "At last, it does exist a good clamp for delicate objects!" (see what is highlighted in the enclosed copy of said brochure, exhibit #2). The fact that Knilling and Hardi have both invested in publishing postcards and brochures to promote and sell the clamps according to the invention proves that the staffs of these two companies were believing in these messages.

On top of this, the following fax-letter sent to Shesto (an agent of Hardi) by Foredom, at the time where Foredom was trying to become the distributor to the hobbyists of the clamps according to the invention in America, shows that this invention has attained a commercial success. After having discovered the clamps at the Shesto's booth in a public hobby show in London and got some samples of them, Foredom displayed these samples at a hobby trade show in Las Vegas (the HIA one). Upon reading this fax-letter (see enclosed copy of it, exhibit #3), it is crystal-clear that the clamps at this show attained commercial success, which militates strongly in favor of patentability. Since then, Zona Tool Company, a parent company to Foredom (these two companies, which have the same address, belong to the same group: the Blackstone one)), has become the distributor to the hobbyists of the clamps according to the invention in America and has also invested in the publication of a brochure (see enclosed copy of it, exhibit #4). Commercial success is further attested by the number of companies which have

wanted in different countries to distribute the clamps according to the invention: on top of Knilling, Hardi, Zona, there are LMI to the guitar makers and repairers in the USA and Canada (see enclosed copy of LMI magnificent brochure about the clamps -called multiclamps- according to the invention, exhibit #8), and also DICK and R & G in Germany, C.F.T. in Holland, Pianotek, Conservation Support System, Talas, Testfabrics in the USA, Art & Conservation, Atlantis, Aviomedelli, Fred's Guitars, Sennelier and Philbois in France, Ditta Goth and CTS in Italy, Museal Conservacion in Mexico, OPTIMIST in Israel, RICARD in Spain, and so forth. This is further not to mention the admission by some editors that they bought the clamps by themselves before getting samples to make experimentation (see exhibits #10 and #14) too.

What it must be added is that applicant's invention as defined by claims 1-3 and 11-16 has been recognized in a professional publication, like the Journal of the Design Technology Association of United Kingdom (vol. 26/2, see enclosed copy of it, exhibit #5). This is not to mention the two top-juried awards the applicant's invention got in France: in 1991, the "Académie du Bricolage et du Jardinage" ("Academy for Do-it-Yourself and Gardening") granted to the applicant in the category "invention" the "Trophée de l'Innovation" (see enclosed copy of the announcement, exhibit #6): this is a kind of Innovation Oscar in the field of Do-it-Yourself; and in 1993, an international jury during the "International Show about Museological Technics" (in French: "Salon International des Techniques Muséographiques) granted to the licensed manufacturer and distributor of the clamps according to the invention in France, XB PRO, the "Label de l'Innovation Muséographique" (see enclosed copy of the corresponding diploma, exhibit #7), that is an Innovation Oscar in the field of Museological Technics.

In the "Response to Arguments" of last OA, it has been acknowledged that "Thornton does not expressly state" a "motivation" to combine the references. However it has been argued that such a motivation as a conclusion of obviousness, could be made from "common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference". To be "common" these knowledge and sense ought to be shared among the people supposed to have ordinary skill in the art such as editors in fields where invention should be of any use, recognized specialists selected as jurors of award committees in same fields, commercial and technical executives of companies dealing on markets related to those fields. All the precedent exhibits are coming from various people belonging to these categories and clearly these people do not share these knowledge and sense at all. If they would consider this invention as obvious, they would have certainly not bothered to welcome this invention in their fields up to writing an editorial after having performing experimentation in the case of editors in the fields, up to selecting it for the grant of an award in the case of specialist jurors, up to investing in the publication of a brochure (not to mention investing in the purchase of stock for resale) in the case of distributors. The person having ordinary skill in the art is supposed to be totally omniscient about all the prior art in his or her field. But he or she is not supposed to be more intelligent than the other people who are working or living in this field. He or she cannot consider as his or her own a sense which is not shared by these other

people. In other words, this argument does not apply to the case. Last OA prompts to "Note that the support part of Neff can be considered to be made of several beams connected together by couplers as claimed in claim 11 and that the elastic buffer can be considered to be split up into pieces". There is absolutely no reference in the prior art showing or suggesting that a clamp or vise beam could be made of several beams or a pad split up into pieces. In the present circumstances without any reference for giving if only the slightest idea of splitting a beam and accordingly a pad, it would be difficult to invoke any common knowledge or common sense. This prompt is pure Monday morning quarterbacking and appears to be quite improper in the case. For this reason and all other reasons given supra applicant requests reconsideration and withdrawal of claims 1-3 and 11-16 rejection on Neff and Thornton under 35 USC 103.

OA issue #8: Claims 4-6 rejection under 35 USC 103 as being unpatentable over Neff in view of Thornton and Berna

First of all, it must be pointed out that the invention as defined by claim 4 provides a new and unexpected result. It permits to clutch a workpiece between four different and unaligned fingertip-like spots (which are the contact faces of the buffers 3, see Fig. 5 of the present application and as exhibit #15 the photograph which was enclosed in the amendment filed with continuous application on 10/12/94) with only one tool. That is as if a hand was clutching with four fingers the workpiece. That gives a more enveloping grasp of tortured workpieces than clamping between only two spots. Apparatus shown on Fig 3. of EPO 0080960 patent (Berna) with 2 jaws 1a and 1c strictly aligned cannot provide such a result all the more so since these two jaws 1a and 1c cannot face each other. At most such an apparatus can clamp two workpieces between two spots each at a time but not a workpiece between four spots. With the invention as defined by claim 4, it is different: the four jaws are independent of each other. Never such a result has been attained with a clamp of the prior art, nor even considered. Perhaps, EPO 0080960 patent (Berna) teaches that it is possible to use several sets of clamping arms on same support part. But it does not say how to arrange them except for the special instance it describes. On top of this, the invention as defined by claim 4, as this claim depends on claim 2, provides the same new and unexpected results than invention as defined by claims 1-3 and 11-16, i.e. providing a precise tactile perception of the gradualness of the clamping and avoiding any pressure peak when difficult-shaped surfaces are clamped.

Secondly, the invention as defined by claim 5 provides also a new and unexpected result, which is the creation of a new helping-hand of which the holder consists of the pair of successive jaws that has been added. This helping-hand permits (see Fig. 6 of the present application) to hold vertically an object between two fingertip-like spots (which are the buffers 3), even if the object size is large. Until now, the sole helping-hands which permitted to hold an object between two spots of small area each could do it only if the object size was small, smaller than one inch. That were the cross-locking tweezers third hand and the alligator-clip helping-hand with two alligator-type spring clips and possibly a magnifier (see enclosed copy of a catalog page showing such a tool, exhibit #16). These helping-hands can hold objects as large as a tweezers or an

alligator-clip can open, that is to say smaller than 1." or so, and this with no control of the clamping force (lever + spring system to substitute hand strength to make the clamping force). Moreover this new helping-hand can spread as the successive jaws of the holder can be reversed unlike previous helping-hands can do. On top of this, the invention as defined by claim 5, as this claim depends on claim 2 through claim 4, provides the same new and unexpected results than invention as defined by claims 1-3 and 11-16, i.e. providing a precise tactile perception of the gradualness of the clamping and avoiding any pressure peak when difficult-shaped surfaces are clamped.

Thirdly, the invention as defined by claim 6 provides also a new and unexpected result, which is the creation of a new helping-hand where the holder consists of the pair of the two initial arms. This helping-hand permits (see Fig. 7 of the present application) to hold horizontally an object between two fingertip-like spots (which are the buffers 3), even if the object size is large, much larger than one inch. Until now, the sole helping-hands which permitted to hold an object between two spots of small area each could do it only if the object size was small, smaller than one inch. That were the cross-locking tweezers third hand and the alligator-clip helping-hand with two alligator-type spring clips and possibly a magnifier (see enclosed copy of a catalog page showing such a tool, exhibit #16). These helping-hands can hold objects as large as a tweezers or an alligator-clip can open, that is to say smaller than 1." or so, and this with no control of the clamping force (lever + spring system to substitute hand strength to make the clamping force). Moreover this new helping-hand can spread as the successive jaws of the holder can be reversed unlike previous helping-hands can do. On top of this, the invention as defined by claim 6, as this claim depends on claim 2, provides the same new and unexpected results than invention as defined by claims 1-3 and 11-16, i.e. providing a precise tactile perception of the gradualness of the clamping and avoiding any pressure peak when difficult-shaped surfaces are clamped.

So applicant requests reconsideration and withdrawal of claims 4-6 rejection under 35 USC 103.

OA issue #9: Claim 7 rejection under 35 USC 103 as being unpatentable over Neff in view of Thornton and Ditto

Claim 7 has been modified just because claim 4 of Pappas (U.S. Patent #4,580,769) recites a removable cap as a stop. A removable stop is no longer claimed in the present application. What is now recited in claim 7 of the present application is a particular way of making a removable stop. This particular way consists in using a short section of a tubular supple sheath. It is enough to slip said section onto said support-part end by a gentle forcing to get a removable stop. This stop can indeed be easily removed by slipping it reversely out of said support part. Of course, this stop cannot be a cap since it is open at both ends. But it can cover an end of said support part when it is slipped it only in part onto said end. This way of making a removable stop provides a new and unexpected result. It makes possible to be supplied in low-cost removable stops. Caps are rather expensive because they need to be manufactured by high-pressure injection molding. That implies costly tooling

involving use of expensive matrix and machinery. On the other hand, tubular supple sheath is currently manufactured by extrusion, that is by continuously forcing melting plastic through a hollow die. That process produces miles of tubular sheath for almost every diameter and at less than the third of the cost of a cap made of same material with same diameter for each foot. For making a stop according to claim 7 as narrowed, just a small portion of a tubular-sheath foot length is needed. So the cost is only a split cost of a sheath foot which is itself a split cost of a cap with same diameter. And the sheath diameter needs not to exactly match the support-part diameter. Just is required a diameter a little smaller than the average diameter of the support part. Accordingly, applicant requests reconsideration and withdrawal of rejection of claim 7 under 35 USC 103.

Conclusion

For all of the above reasons, applicant submits that the claims now all define patentably over the prior art. Therefore he submits that this application is now in condition for allowance, which action he respectfully solicits.

Conditional Request For Constructive Assistance

Applicant has amended the claims of this application so that they are proper, definite, and define patentably over the prior art. If, for any reason this application is not believed to be in full condition for allowance, applicant respectfully requests the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. §707.07 (j) in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings.

Very Respectfully



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